

L30 ANSWER 1 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 96040015 MEDLINE <>LOGINID::20080306>>
 DOCUMENT NUMBER: PubMed ID: 7554594
 TITLE: Anatomy and physiology of cervical ripening.
 AUTHOR: Leppert P C
 CORPORATE SOURCE: Department of Obstetrics and Gynecology, University of Rochester, Rochester General Hospital, NY 14621, USA.
 SOURCE: Clinical obstetrics and gynecology, (1995 Jun) Vol. 38, No. 2, pp. 267-79. Ref: 21
 Journal code: 00780014. ISSN: 0009-9201.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)
 General Review; (REVIEW)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199511
 ENTRY DATE: Entered STN: 27 Dec 1995
 Last Updated on STN: 3 Mar 2000
 Entered Medline: 9 Nov 1995
 AB The uterine cervix is a unique organ composed predominately of the extracellular matrix proteins, collagen, elastin, and glycosaminoglycans. During pregnancy and labor, this organ is metabolically active, which is rare in adult tissue. The metabolism is under reproductive hormonal control and is more complex than previously appreciated. Smooth muscle cells, which comprise 10-15% of cervical tissue, undergo programmed cell death and play a role in cervical softening. Apoptosis is a genetically timed event and could explain the species-specific length of gestation. Further research in the next several years will reveal more completely the exciting process of cervical ripening. Only when this phenomenon is understood will rational therapy for preterm labor and post-term pregnancy with an unripe cervix be available. Specific defects in cervical ripening will then be diagnosed and treated. For example, if apoptosis is shown to play an important role in the process of cervical ripening, it could be inhibited. Conversely, it could be induced in the unripe cervix. If we would look for it, we would find that it is probably occurring today in the clinical use of cervical ripening agents. The most important contributor to cervical softening, however, is a rearrangement and realignment of the collagen, elastin, and smooth muscle cells, which occurs due to mechanical forces and to a rearrangement of the collagen that occurs as the content of glycosaminoglycans varies in the cervix with time. One form of dermatan sulfate, decorin, may help to separate the collagen fibrils and then open them up. This rearrangement also involves fiber shortening below the critical length for tensile strength, allowing for extensibility of the cervix. Because of its orientation in the cervix, elastin contributed to the ratchet-like mechanism of dilatation. Finally, the cervix undergoes change in two phases—softening, which involves collagen realignment, and dilatation. The proteolytic enzymes in the cervix degrade cross-linked, newly synthesized collagen, and they help activate other enzymes in a cascade. However, the predominate anatomic and physiologic change in ripening is the rearrangement of collagen.

L30 ANSWER 2 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 94303776 MEDLINE <>LOGINID::20080306>>
 DOCUMENT NUMBER: PubMed ID: 8030737
 TITLE: Interleukin-8 induces cervical ripening in rabbits.
 AUTHOR: el Maradny E; Kanayama N; Halim A; Maehara K; Sumimoto K; Teraso T
 CORPORATE SOURCE: Department of Obstetrics and Gynecology, Hamamatsu University School of Medicine, Japan.
 SOURCE: American journal of obstetrics and gynecology, (1994 Jul) Vol. 171, No. 1, pp. 77-83.
 Journal code: 0370476. ISSN: 0002-9378.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English

FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
 ENTRY MONTH: 199408
 ENTRY DATE: Entered STN: 18 Aug 1994
 Last Updated on STN: 18 Aug 1994
 Entered Medline: 11 Aug 1994

AB OBJECTIVE: The purpose of this study was to determine whether cervical ripening can be induced in rabbits by interleukin-8. STUDY DESIGN: Nonpregnant and pregnant rabbits were treated for 5 days with vaginal suppositories containing 100 ng of interleukin-8. Collagen and glycosaminoglycan concentration in the cervix were assessed histologically by picrosirius red and alcian blue, and the mean optical density was calculated. The mean neutrophil count in five random fields was calculated from each biopsy specimen. RESULTS: Interleukin-8 induced softening and dilatation of the rabbit cervix. Water content was significantly increased ($p < 0.0001$ and $p < 0.001$, respectively). Cervical collagen concentration was found to be significantly decreased ($p < 0.0004$ and $p < 0.0001$, respectively). Glycosaminoglycan concentration was significantly increased in nonpregnant and pregnant cervixes ($p < 0.0009$ and $p < 0.1$, respectively). The mean number of neutrophils was significantly increased ($p < 0.0005$ and $p < 0.006$, respectively). CONCLUSION: Interleukin-8 can induce cervical ripening in nonpregnant and pregnant rabbits.

L30 ANSWER 3 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 84059229 MEDLINE <>(LOGINID:20080306>>
 DOCUMENT NUMBER: Pubmed ID: 6315547
 TITLE: Increased postpartum collagenolytic activity in cervical connective tissue from women treated with prostaglandin E2.
 AUTHOR: Ekman G; Ulbjerg N; Malmstrom A; Ulmsten U
 SOURCE: Gynecologic and obstetric investigation, (1983) Vol. 16, No. 5, pp. 292-8.
 Journal code: 7900587. ISSN: 0378-7346.
 PUB. COUNTRY: Switzerland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198401
 ENTRY DATE: Entered STN: 19 Mar 1990
 Last Updated on STN: 19 Mar 1990
 Entered Medline: 7 Jan 1984

AB Cervical biopsies obtained from 7 patients immediately following parturition induced by intracervical application of 0.5 mg prostaglandin E2 (PGE2) in viscous gel were compared with similar biopsies from 11 spontaneously delivered women. A DNP-peptide hydrolytic activity (collagenase) was significantly increased in cervical tissue from the PGE2-induced patients compared with controls. In patients with prompt clinical response, the increase was nearly twofold. No differences were found in the concentrations of water, sulfated glycosaminoglycans, hyaluronic acid, hydroxyproline or leukocyte elastase. Thus, PGE2-induced cervical priming seems to be associated with an increased collagenolytic activity.

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 ACCESSION NUMBER: 2006376207 EMBASE <>(LOGINID:20080306>>
 TITLE: Cervical ripening: Biochemical, molecular, and clinical considerations.
 AUTHOR: Maul H.; MacKay L.; Garfield R.E.
 CORPORATE SOURCE: Dr. R.E. Garfield, Division of Reproductive Sciences, Department of Obstetrics and Gynecology, University of Texas Medical Branch, Galveston, TX 77555-1062, United States. rgarfield@utmb.edu
 SOURCE: Clinical Obstetrics and Gynecology, (Sep 2006) Vol. 49, No. 3, pp. 551-563.
 Refs: 35
 ISSN: 0009-9201 CODEN: COGYAK
 PUBLISHER IDENT.: 0000308120060900000015
 COUNTRY: United States
 DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 010 Obstetrics and Gynecology
 027 Biophysics, Bioengineering and Medical
 Instrumentation
 037 Drug Literature Index

LANGUAGE: English
 SUMMARY LANGUAGE: English
 ENTRY DATE: Entered STN: 22 Aug 2006
 Last Updated on STN: 22 Aug 2006

AB The physiologic and pathologic changes of the uterine cervix during pregnancy leading to cervical ripening are not well understood though are related to the chief pathology and a commonly performed intervention in obstetrics: Preterm birth and labor induction. Normal cervical ripening is thought to be controlled by a variety of hormonal changes occurring during pregnancy leading to softening and dilation. Abnormal premature ripening, usually resulting in preterm labor, is thought to be associated with infection and inflammatory events. Despite many studies of the cervix, we still rely upon relatively crude methods for clinical evaluation of the cervix. In the past several years, we have developed and evaluated a method to measure cervical collagen noninvasively using an instrument called Collascope. Studies in animals and humans conducted in a variety of settings indicate that cervical function can be successfully monitored using the Collascope during pregnancy. We suggest that this technique might be useful to better define management in cases of spontaneous preterm and induced term cervical ripening. .COPYRGT. 2006,
Lippincott Williams & Wilkins.

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ACCESSION NUMBER: 1979209830 EMBASE <>LOGINID::20080306>>
 TITLE: The cervix of the sheep and goat during parturition.
 AUTHOR: Fitzpatrick R.J.; Dobson H.
 CORPORATE SOURCE: Fac. Veter. Sci., Univ. Liverpool, United Kingdom
 SOURCE: Animal Reproduction Science, (1979) Vol. 2, No. 1-3, pp. 209-224.

COUNTRY: ISBN: 0378-4320 CODEN: ANRSDV
 Netherlands
 DOCUMENT TYPE: Journal
 FILE SEGMENT: 010 Obstetrics and Gynecology
 LANGUAGE: English

AB The change in physical character of the wall of the cervix has been investigated in sheep and goats in relation to the induction of parturition. Two types of observation were made, extension of isolated tissue in vitro and dilation of the cervical canal with balloons in vivo. A decrease in the elastance of the tissue was detectable within 12 hours of first administration of dexamethasone and the decrease was progressive thereafter. This change was unrelated to the plasma concentration of prostaglandin F. There was some relationship in time to changes in circulating concentrations of oestrogen and progesterone but this was not consistent in all animals. Biochemical investigations of cervical wall revealed a marked increase in the liberation of hydroxyproline from collagen and a change in the pattern of extractable glycosaminoglycans, as induction advanced.

130 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:1250518 CAPLUS <>LOGINID::20080306>>
 DOCUMENT NUMBER: 1341320939
 TITLE: Mechanisms of cervical ripening
 AUTHOR(S): Thomson, A. J.; Ledingham, M.-A.; Norman, J. E.
 CORPORATE SOURCE: Department of Obstetrics and Gynaecology, University of Glasgow Glasgow Royal Infirmary, Glasgow, UK
 SOURCE: New Technologies in Reproductive Medicine, Neonatology and Gynecology, International Congress, 2nd, Porto Conte, Italy, Sept. 18-23, 1999 (1999), 409-415.
 Editor(s): Cosmi, Ermelando V. Monduzzi Editore: Bologna, Italy.
 CODEN: 69BDQJ
 DOCUMENT TYPE: Conference; General Review
 LANGUAGE: English

AB A review, with 82 refs. Cervical ripening refers to the increased softening, distensibility, effacement and early dilatation which occurs before the onset of labor. This process can be induced pharmacol. and is frequently employed in clin. practice at all stages of pregnancy. Histol., cervical ripening is characterized by an increased hydration, a reduction in collagen concentration and an alteration in the glycosaminoglycan/proteoglycan composition. The mechanisms involved in cervical ripening are incompletely understood although several factors which may control the ripening process have been identified. More recently, the involvement of nitric oxide in cervical ripening has aroused considerable interest. The purpose of this article is (i) to summarize the methods of inducing cervical ripening in clin. practice, (ii) to review the possible mediators of cervical ripening, and (iii) to evaluate the role of nitric oxide in cervical ripening in women.

REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT